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CONTRIBUTION TO ORTHOPTEROLOGY.

BY PROF. C. THOMAS.

Caloptenus differentialis. Thomas.

Syn. *Acridium differentiale*, Uhler. Trans. Ill. St. Ag. Soc., v. 450.
(Thos.) *Cyrtacanthacris differentialis*. Walk. Cat. Dermap., IV. 610.

Although the name of this insect has found its way into the catalogues, yet it has received no other description than the very short and imperfect one given by me in the Transactions of the Illinois State Agricultural Society, vol. v. 450. It was designated by the name *A. differentiale*, in a box of Orthoptera kindly named and returned to me by Mr. Uhler. But as he has never described it, and, as I learn from him, does not propose to do so, I give here the first regular description, that it may no longer stand in the catalogues as a mere name.

Large, robust; sides of the pronotum squarely deflexed, but lateral carinæ not distinct; wings as long as the abdomen; pulvilli of tarsi remarkably large. General color, olive-brown.

Female. Occiput convex, not punctured; a transverse indentation between the angles of the eyes; vertex broad, expanding in front of the eyes, obtuse, with a broad shallow sulcus above (perhaps not always distinct); the frontal carina broad, flat, or very slightly sulcate, sides parallel, a row of slight punctures each side; lateral carinæ obtuse, nearly parallel. Antennæ passing the thorax slightly, slender, filiform, joints not distinct except near the base. Pronotum has the sides squarely deflexed, the dorsum but slightly convex, that of the posterior lobe being almost flat; the three transverse incisions distinct, the posterior, which is deeply indented, being postmedial; the median carina distinct on the posterior lobe, but indistinct on the anterior lobes; the lateral carinæ consist only of the rounded angles formed by the deflexion of the sides. Elytra narrow, about as long as the abdomen. Wings thin and delicate, with slender nerves, a little shorter than the elytra. Abdomen large and fleshy, somewhat keeled above; upper and lower appendages very stout, cerci very short. Posterior femora very much swollen near the base and quite thick, tapering rapidly so as to be rather slender near the knee; a little shorter than the abdomen; not sharply carinated either above or below. Tibiæ much enlarged at the apex; about as long as the femora; the apical half furnished with strong spines and hairy. 1871.]

Claws of the tarsi stout; pulvilli remarkably large. Prosternal spine cylindrical, blunt, and bent back to the margin of the meso-sternum.

Male. Is only about two-thirds the size of the female, from which it differs as follows: Frontal carinae more distinct, the middle one more distinctly sulcate. The elytra and wings are longer in proportion to the body, extending beyond the abdomen; the posterior femora also proportionally longer. The abdomen is considerably enlarged at the extremity, and turned abruptly upward; the cerci very large, bent upward and inward, broad at base, with an offset or notch on the lower edge; the little angular processes at the base of the superanal plate are very minute and blunt (much less than in *C. spretus* or *femur-rubrum*); the subanal plate convex, pointed, and almost entire, hairy.

Color (dried after long immersion in alcohol).

Female. Head and anterior lobes of the pronotum reddish-brown; labrum and parts of the mouth black; antennae rufous. Posterior lobe of the pronotum an olive-brown. Elytra unspotted, olive-brown at the base, fading toward the extremity. Wings transparent, with a portion of the nerves near the front and apex dark. Abdomen and under side dark reddish-brown. Posterior femora with the disk and upper edge dark brown, lower edge yellowish; inside yellow, with an oblique, interrupted, dark stripe running from the upper edge back across to the lower edge beyond the middle; knee black. Tibiae have the upper end and lower half yellow, spines black; tarsi brown; claws yellow at base, black at the points; pulvilli with a yellow stripe through the middle.

Male. Very similar, the principal difference being that the thorax, abdomen, and under side are of a lighter olive or yellow color; an oblique yellow stripe immediately behind the middle legs quite distinct and bright.

When the insect is living, the olive-brown is an olive-green or olive color; and there are yellow spots and stripes on the thorax, and the abdomen and under side are principally yellow. The male is generally of a brighter color than the female.

Dimensions. Female, length 1.7 in.; head and pronotum .52 in.; femora .92 in.; tibiae .9 in. Male 1.2 in.

Habitat. Jackson County, Illinois.

Note.—Walker (Cat. Dermap, iv. 610) has placed this species in *Cyrta-*

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canthacris, for no other reason, so far as I can see, than that the prosternal spine approaches the border of the mesosternum. Although it differs slightly from the typical species of *Caloptenus*, yet it certainly has more characters of the latter than of the former genus. It is, in shape, very much like the larger specimens of *C. bivittatus*. The back of the pronotum is not sloped from the median carina, but is exactly like the dorsum of *femur-rubrum*, *spretus*, *bivittatus*, etc.

***Opomola brachyptera*, Seudd.**

As Mr. Scudder's description is founded on a single male specimen, I will give a full description of what I conceive to be a female of the same species.

Female. Vertex carinated; elytra narrow, reaching the tip of the second abdominal segment. Antennæ broad, ensiform. Pale orange-brown, with minute dusky points.

Occiput convex, straight, not ascending, with a shallow longitudinal depression each side, leaving a low, broad, rounded ridge in the middle. Vertex triangular, margins turned up, a very distinct median carina, the three meeting together in front form a blunt point; length in advance of the eyes equal to about one-third the entire length of the head. The face tricarinate, or rather quadricarinate, as the frontal ridge is so deeply sulcate that it forms two distinct carinæ, which meet at the vertex; all somewhat divergent, and reaching the cross suture. Eyes oblong-ovate. Antennæ scarcely as long as the head and thorax, ensiform, flattened, and slightly prismatic. Pronotum about as long as the head, tricarinate; sides almost perpendicular, parallel; only the posterior transverse impression distinct on the dorsum, situated a little behind the middle. Elytra lanceolate, narrow, reaching the extremity of the second abdominal segment. Wings narrow, minute, about half as long as the elytra. Abdomen long, slender and somewhat cylindrical, slightly carinated on the dorsum. The four anterior legs short and slender; posterior femora slender, straight, and not as long as the abdomen; tibiæ slender, nearly cylindrical, somewhat hairy at the apex. The prosternal point is short, being only a blunt protuberance; behind it the prosternum is marked by a shallow sulcus (but this may not be constant). *Color* (dried after long immersion in alcohol). General color a pale orange-brown, without distinct spots or markings, but with minute dusky points. The antennæ brown, with a purplish tinge; vertex, legs, and abdomen tinged with the same color. Spines of

the posterior tibiae, abdominal appendages, and tarsal claws tipped with black.

When living, the only specimen I have seen appeared to be of a uniform grayish-brown. Length 1.5 inches.

My unique specimen was caught near the ruins of Fort Casper, on the North Platte, Wyoming Territory, August, 1870. Found in the tall grass on the river bottom.

Mesops wyomingensis, Thos. nov. sp.

Small, slender, cylindrical; elytra reaching the fifth abdominal segment; abdomen of the male terminating in a pointed process. Pale green, sometimes varied with red, immaculate.

Female. Occiput convex, slightly bowed up in the middle; a very slight median ridge can be discerned which reaches a little in front of the eyes, where it suddenly terminates in a semicircular depression, which separates it from the vertex. The vertex is flat above, conical, margin not turned up, triangular, advanced considerably in front of the eyes; a shallow foveola may be distinguished under each lateral margin; the circular depression which divides it from the occipital ridge, sweeps round from the upper canthus of one eye to that of the other. The face quadricarinate—the frontal ridge being so deeply sulcate as to appear like two distinct carinae, all prominent, sharp, divergent below, and reaching the cross suture; the sides of the frontal ridge approach each other just below the ocellus, and on each side, directly opposite this constriction, there is a short transverse indentation (this appears to be constant). Eyes oblong-ovate, somewhat prominent, situated near the antennae. Antennae flattened, broad, and somewhat prismatic. Pronotum about as long as the head, nearly cylindrical, not carinated, though a faint median line is sometimes visible. Elytra narrow, sharply rounded at the apex, reaching to the anterior margin of the fifth segment. Wings nearly the same length. Abdomen elongate, cylindrical, slightly enlarged at the apex; appendages short, the upper ones nearly covered by the super-anal plate; the cerci are mere points. The four anterior legs are very short and delicate; posterior femora of moderate length, reaching the tip of the fifth segment, slender and deeply channelled below; posterior tibiae about the same length as femora, very slender, cylindrical, furnished with delicate spines about two-thirds their length; tarsi somewhat elongate,

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the middle joint being rather longer in proportion to the others than usual. Prosternal point quite short and blunt, more so in the female than in the male. Mesosternum convex, with a sharp indentation running lengthwise on each side.

Color (dried after long immersion in alcohol). Pale greenish-yellow, immaculate. Antennæ dull ash color, darkest along the exterior margin. Spines of the posterior tibiæ and tarsal claws tipped with black. When living, the female is of a uniform pea-green color.

Male. Differs from the female as follows: Is much smaller and of more slender proportions. The vertex more pointed and the margins slightly elevated. Face rather more oblique, being almost horizontal. Abdomen terminating with a long-pointed extension bent slightly upward at the tip, about equal in length to the head. Elytra and wings same proportional length as in the female. Antennæ, face, vertex, occiput, pronotum, posterior femora, and abdominal appendage a pale carneous red; a white stripe runs from the lower border of the eye along the lower edge of the face and pronotum to the base of the middle legs. This description of the male marks the extreme variation from the female, those of immediate shades being common.

Found along the east base of the Black Hills of Wyoming, in the vicinity of Cottonwood Creek, August, 1870. Taken in the grassy creek bottoms.

Dimensions. Female—length 1.1 inch; male, .9 inch.

I have placed this species in *Mesops*, to which it appears to belong from the incomplete generic description of Serville, who had only one imperfect specimen, which had the apex of the abdomen wanting. Walker (Cat. Dermap., III. 501) names another species of this genus—*M. carinatus*—as found in the United States, but speaks of the sheaths of the oviduct of the female as being *lanceolate*.

Note.—Two errors occur in my paper published in the Proceedings July, 1870, which should be corrected.

B. nigrum, Thos., should be *B. nubilum*, Thos.

SYN. *Gryllus nubilus*, Say.

Oed. pruinosa, Thos., should be *Oed. trifasciata*, Thos.

SYN. *Gryllus trifasciatus*, Say.

The descriptions are proper, and may stand, as the original descriptions of Say are very short and incomplete. The corrections were forwarded before publication, but failed to reach their destination.

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